NASA draft comments on FCC Notice of Proposed Rule Making in the matter of Amendment of Parts 2 and 25 of the Commission's Rules to Allocate the 13.75-14.0 GHz Band to the Fixed-Satellite Service (ET Docket No. 96-20).

1. Adopt new ITU footnotes S5.502, S5.503, S5.503A from WRC-95 and Recommendation ITU-R SA.1071 instead of 855A, 855B and 855C.

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This would result in the following changes:

a. Paragraph 1, 4th sentence should read "In addition, we propose to adopt domestically the international footnotes and ITU-R Recommendations that specify the spectrum sharing criteria between incumbent services and the FSS as contained in the Final Acts of the World Radiocommunication Conference (WRC-95)[3]"

b. Paragraph 4 should read "At WARC-92, the 13.75-14.0 GHz band was allocated worldwide for FSS uplink operations on a co-primary basis with the radiolocation service.[8] WRC-95 adopted international footnotes S5.502, S5.503 and S5.503A which specify sharing criteria between FSS and space science services in the band, including TDRSS. Footnote S5.502 places restrictions on the fixed-satellite, radiolocation and radionavigation services in order to allow these services to share the band. Footnote S5.503 places greater restrictions on transmitter power for FSS uplinks in the 13.772-13.778 GHz band segment than for FSS uplinks in the rest of the band, in order to provide additional protection for the TDRSS forward command link in its critical six megahertz bandwidth. Footnote S5.503A places restrictions on the FSS by reference to protection criteria set forth in Recommendation ITU-R SA.1071 and provides for a transition period so that active space research sensors can vacate the band."

c. Paragraph 5 should be read "The ITU footnotes S5.502, S5.503 and S5.503A adopted at WRC-95 were in agreement with U.S. Proposals for WRC-95 and domestically, the recommended sharing criteria including Recommendation ITU-R SA.1071 have been supported by the National Telecommunication and Information Administration ("NTIA") and the Commission.[10]"

d. Paragraph 10 should read "We propose to adopt ITU footnotes S5.502, S5.503 and S5.503A from WRC-95 and Recommendation ITU-R SA.1071 as the final sharing criteria between FSS and other operations in this band.[21] These international footnotes will provide incumbent operations in this band, except for TDRSS as discussed below, with adequate protection from FSS operations. Specifically, footnote S5.502 provides sharing criteria between the radiolocation and fixed-satellite services; footnote S5.503 provides protection for the existing TDRSS critical forward link and footnote S5.503A, by its reference to Recommendation ITU-R SA.1071, provides active sensors with interference protection from FSS uplinks for the transition period during which such sensors will migrate to other bands."

e. Paragraph 11, 3rd sentence should read "However, footnote S5.503 protects TDRSS only..."

f. Paragraph 12, 2nd sentence should read "These amendments would add the 13.75-14.0 GHz band to the list of frequency bands in 25.202(a)(1): and would set forth power limits for earth stations in 25.204(f), consistent with the power limits specified in footnotes S5.502 and S5.503."

g. Paragraph 14, sentence 3 should read "In addition, we intend to update the International Table to reflect the Final Acts of WRC-95 for the 13.4-14.0 GHz band."

h. Paragraph 14, sentence 5 should read "In addition, international footnotes S5.502, S5.503, S5.503A and Recommendation ITU-R SA.1071 would be added to columns (1) through (3) in the 13.75-14.0 GHz band. (Footnotes S5.502, S5.503, S5.503A and Recommendation ITU-R SA.1071 would also appear in columns (4) and (5), in accordance with our proposal.)"

i The following footnotes should read as follows:

[3] See Final Acts of the World Radiocommunication Conference (WRC-95) Geneva, 1995, Geneva, 17 November 1995 ("Final Acts").

Delete footnote 9.

[21] See Appendix A for the proposed modifications to the Table of Frequency Allocations, Section 2.106 of the rules, including the text of footnotes S5.502, S5.503 and S5.503A.

j. Appendix A, d. should read "Add International Footnote Numbers S5.502, S5.503, S5.503A and Recommendation ITU-R SA.1071"

k. In the Table of Frequency Allocations all international footnotes 855A, 855B, 855C should be replaced with S5.502, S5.503, S5.503A and Recommendation ITU-R SA.1071.

l. In the International Footnotes section, footnotes 855A, 855B, 855C should be replaced with the text of S5.502, S5.503, S5.503A and Recommendation ITU-R SA.1071.

2. Include FSS Earth station exclusion diagrams for protection of TOPEX/POSEIDON altimeter and TRMM precipitation radar (see Figures 1 & 2).

a. Add the following paragraphs after paragraph 10 "In order to protect the Government spaceborne altimeter TOPEX/POSEIDON recommends 3.1 of Recommendation ITU-R SA.1071 provides consultative procedures. In accordance with these recommendations, the diagram in Figure 1 shows geographic exclusion zones within which FSS Earth stations operating in the 13.75-14.0 GHz band may cause harmful interference to the TOPEX/POSEIDON altimeter. Constraining FSS Earth stations to outside these zones until 1 January 2000 will assure protection of TOPEX/POSEIDON. Earth stations within these zones will require consultation on a case-by-case basis.[footnote]"

"In order to protect the Government spaceborne precipitation radar TRMM footnote S5.503A refers to the consultation process in recommends 5 to 5.3 of Recommendation ITU-R SA.1071. In accordance with these recommendations, the diagram in Figure 2 shows geographic exclusion zones within which FSS Earth stations operating in the 13.75-13.86 GHz band may cause harmful interference to the TRMM precipitation radar. FSS Earth stations which meet the criteria set forth in recommends 5.1.1 and 5.1.2 and are located outside these zones will assure protection of TRMM. Earth stations within these zones will require consultation on a case-by-case basis. This consultation process is in effect until 1 January 2001.[footnote]"

b. [footnote] The determination of the exclusion zones for TOPEX/POSEIDON and TRMM assumes an Earth station e.i.r.p. of 85 dBW and a 4.5 meter antenna diameter with the RR Appendix 28 radiation pattern.

4. The proposed description, in paragraph 11, of FSS coordination with White Sands needs to be more specific.

Paragraph 11, last sentence should read "In addition, we observe that geostationary TDRSS satellites use the entire 13.75-14.0 GHz band as a downlink to communicate with two earth stations at the White Sands Complex, New Mexico: White Sands Ground Terminal (WSGT) at 106° 36' 31" W, 32° 29' 54" and Second TDRS Ground Terminal (STGT) at 106° 36' 48" W, 32° 32' 40" N. FSS earth stations providing either domestic or international service must be coordinated over the 13.75-14.0 GHz band with WSGT and STGT on a primary basis. The methods and criteria of Appendix 28 will be used to determine the coordination area.

5. The proposed modifications to the Table in Part 25 (page 5 in Appendix A) dealing with the 13.75-14.0 GHz bands need more explanation than given by superscript 1.

Part 25 Table, the superscript referring to the Earth-to-space frequency range 13.75-14.0 GHz range should read "This band is shared coequally with terrestrial radiocommunication services. FSS Earth stations in the 13.75-13.8 GHz band must be coordinated with Government operations in order to minimize harmful interference to the Tracking and Data Relay Satellite System."

6. The FSS Earth Station emission criteria from ITU-R-SA.1071 should be added to Part 25 -Satellite Communications.

Part 25, section 25.202 or 25.204 the following should be added:

a. FSS Earth stations operating in the 13.75-14.0 GHz band shall not be located within the critical zones identified in Figure 1 until 1 January 2000.

b. The e.i.r.p. of any emission from any FSS Earth station operating in the frequency range 13;99356-13.99644 GHz shall not exceed 25 dBW in any 2 kHz band until 1 January 2000. To meet this condition, it may be advisable to avoid operation between these frequencies.

c. The e.i.r.p. density of any FSS earth station at a latitude between ±55° shall not exceed 61 dBW in any 600 kHz band between 13.793 and 13.805 GHz until 1 January 2001.

d. The elevation angle of any FSS earth station using the 13.75-14.0 GHz band shall not exceed 71° until 1 January 2001.

e. FSS earth stations operating in the 13.75-13.8 GHz band shall not be located within the critical zones identified in Figure 2 until 1 January 2001.

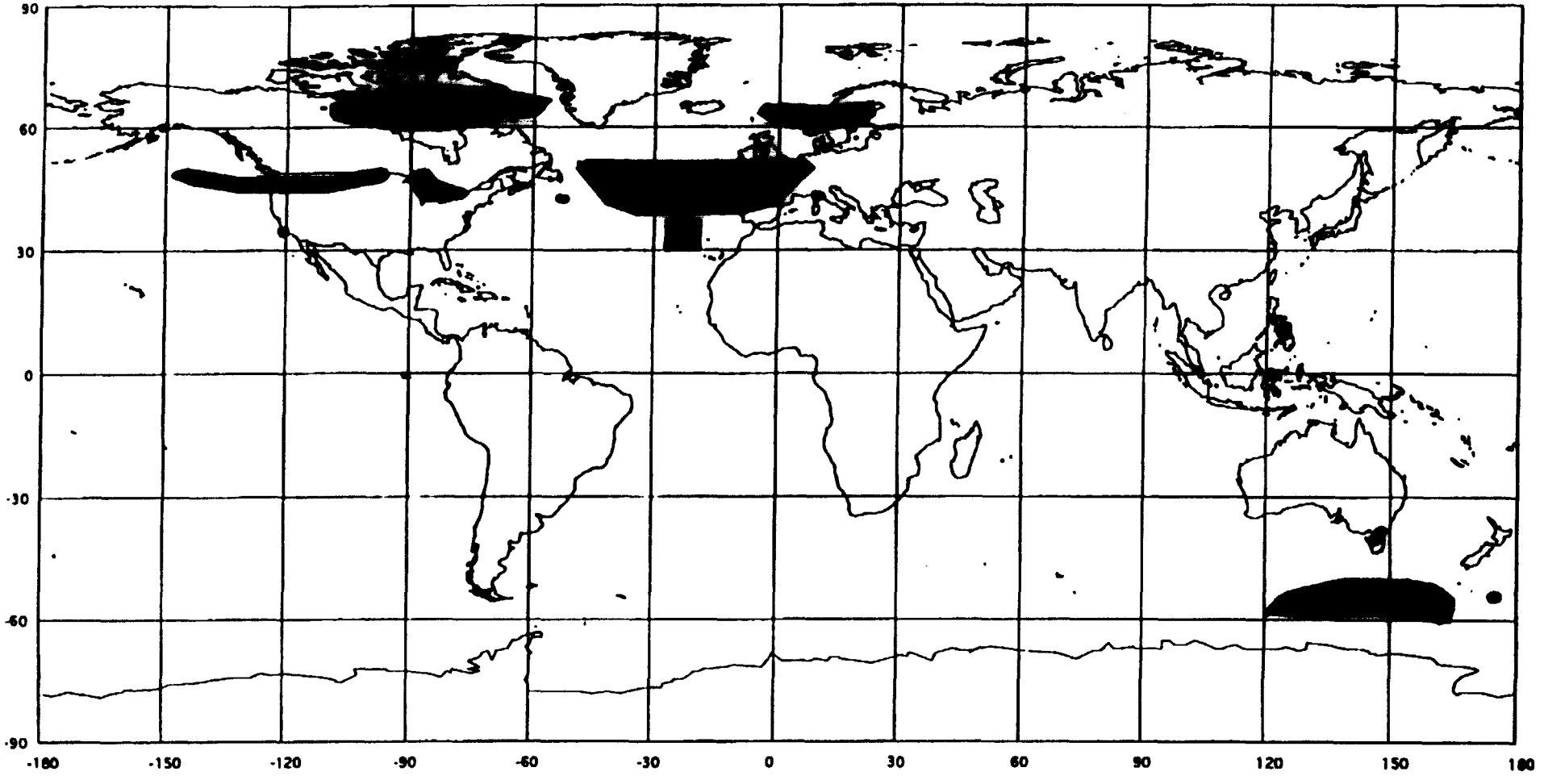

Figure 1 FSS Earth station exclusion zones for TOPEX/POSEIDON protection

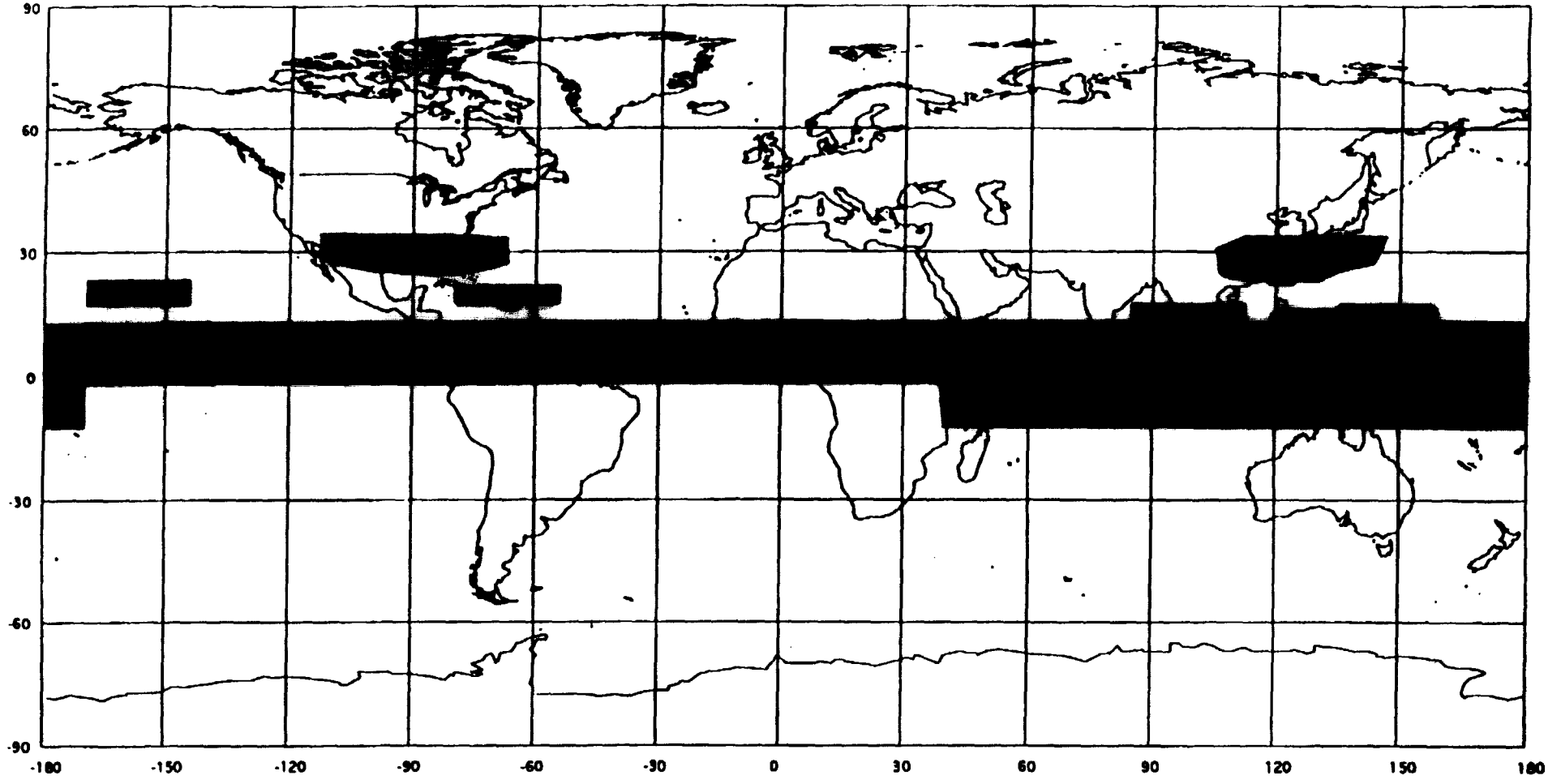

Figure 2 FSS Earth station exclusion zones for TRMM protection